

**REMARKS**

**Introduction**

Claims 1-21 are currently pending in the application. Claims 1-5, 8-12, and 15-19 have been amended. Applicant respectfully submits that no new matter has been added. No claims have been added or canceled. Applicant respectfully requests reconsideration of the application in view of the foregoing amendments and the following remarks.

**The Examiner's Interpretation of Claims 1-21**

Applicant respectfully disagrees with the Examiner's interpretation of claim 1 that claim 1 is met by "any comparison between a converted input and a rule, wherein the rule is used in populating a knowledge base based on patterns" and "doing anything based on the result of the comparison." Nevertheless, in the interest of clarification and timely prosecution of this application, Applicant has amended independent claim 1 in four respects. First, claim 1 now recites populating the knowledge base responsive to the executing step *with facts and rules derived from the translated edit in accordance with the at least one knowledge-base-population rule*. Second, the knowledge base is clarified to comprise a collection of facts and rules *usable for medical claim processing*. Third, it is stated that *an edit represents a directive to correct or reject a medical claim that does not comply with business rules*. Fourth, it is further stated that *a translated edit represents at least a portion of an edit in a syntactical form for filtering by at least one knowledge base population rule*. Similar amendments have been made to independent claims 8 and 15.

The Office Action indicates that there is ambiguity regarding the terms *conclusion variable* and *expanding*. Regarding the term *conclusion variable*, Applicant has amended claims 3-4, 10-11, and 17-18 to recite a *variable from the at least one knowledge-base-population rule*. Regarding the term *expanding*, Applicant respectfully refers the Examiner to pages 39-40 of the specification. Applicant respectfully submits that any other alleged ambiguities should be resolved by the above-mentioned clarifications of the terms *edit*, *translated edit*, and *knowledge base*.

**35 U.S.C. § 101 Rejection**

Claims 1-21 stand rejected under 35 U.S.C. § 101 as being directed to non-statutory subject matter. The Examiner has conceded that a populated knowledge base may be a useful, concrete, and tangible result for an application where the knowledge base is populated with real world data specific to a particular practical application. The Examiner argues, however, that the claims are not limited to a particular practical application and in fact preempt all practical applications of a populated knowledge base. For at least the reasons set forth below, Applicant respectfully disagrees.

Although Applicant believes that the claims as they existed prior to this amendment represented statutory subject matter, Applicant respectfully submits that the claims as amended are now even more clearly directed to statutory subject matter. Applicant respectfully submits that claims 1-21 do not foreclose others from the use of knowledge bases as asserted by the Office Action, but only knowledge bases that include all of the features of the respective claims and equivalents thereof.<sup>1</sup> The Office Action provides examples of other applications that might be preempted, including knowledge bases used for facial recognition, video searches, and audio knowledge bases for music cataloging. However, the Office Action has supplied no support for the assertion that all uses of knowledge bases would be preempted by claims 1-21.

For instance, independent claim 1 recites specific filtering and executing steps, with the filtering step reciting "filtering a translated edit." The culmination of these steps is a concrete, useful, and tangible result of a populated knowledge base, which has been further defined to include a collection of facts and rules. Independent claims 8 and 15 similarly recite a useful, concrete, and tangible result. Applications of a knowledge base, including those listed by the Office Action, are not preempted unless all of the features or equivalents thereof of the claim are met. As a result, Applicant respectfully submits that claims prior to the amendments were directed to patentable subject matter.

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<sup>1</sup> See *Diamond v. Diehr*, 450 U.S. 175 at 187 (stressing that the patent applicants in that case did "not seek to preempt the use of [an] equation," but instead sought only to "foreclose from others the use of that equation in conjunction with all of the other steps in their claimed process").

As mentioned above, however, Applicant has amended independent claims 1, 8, and 15. These claim amendments further clarify that a populated knowledge base as claimed *is* a specific practical application. The terms *edit*, *translated edit* and *knowledge base* have been clarified to stress that Applicant is not attempting to claim a populated knowledge base generally, but rather only as claimed. Assuming, for the sake of argument, that the claims were not directed to patentable subject matter prior to these amendments, Applicant respectfully submits that independent claims 1, 8, and 15 must now be construed as being directed to a specific application of a populated knowledge base usable for medical claim processing; as a result, claims 1, 8, and 15 are clearly directed to patentable subject matter. Applicant respectfully requests that the 35 U.S.C. § 101 rejection of claims 1-21 be withdrawn.

### **35 U.S.C. § 102 Rejection**

Claims 1-21 have also been rejected under 35 U.S.C. § 102 as being anticipated by U.S. Patent Application Publication No. 2002/0040359 to Green et al. ("Green"). Green teaches a method and apparatus for transforming information from one semantic environment to another.

Applicant respectfully submits that the aforementioned amendments to independent claims 1, 8, and 15 have rendered the Examiner's interpretation of those claims untenable and the rejections based thereon moot. Green does not teach or suggest a knowledge base with facts and rules derived from translated edits, where a knowledge base is a collection of facts and rules usable for medical claim processing. Applicant respectfully submits that for at least this reason, Green does not anticipate claims 1-21 and requests that the 35 U.S.C. § 102 rejection of claims 1-21 be withdrawn.

Claim 1 is directed to a method of populating a knowledge base. Applicant respectfully submits that at least one additional feature of independent claim 1 is not taught by Green, namely, filtering a translated edit via at least one knowledge-base population rule to determine a match between a syntax of the translated edit and a syntax of the knowledge-base-population rule. As a threshold issue, this feature requires a translated edit; however, Green fails to disclose an edit as claimed, much less a translated edit.

Green's failure to teach a translated edit leads to another deficiency. Green fails to disclose filtering *any text* with *any kind of rule* to determine a match between a syntax of the text

and a syntax of the rule as claimed. Green teaches transforming text “in its native form” (See Green paragraph 36) into an intermediate standardized form in order to facilitate its ultimate transformation into a destination semantic environment (e.g., another language such as French). By starting with text “in its native form,” which by definition is not a translated edit, there is no inherent uniform structure to the syntax of the text as there is with a translated edit as claimed. Text in its native form is open to the domain, for example, of the entire English language. Therefore, Green does not, and logically cannot, disclose determining a match between the syntax of the text and the syntax of the rule. In contrast, Green teaches applying certain rules without regard to whether there is a match between the syntax of the text and the syntax of the rule.

More specifically, Green discloses two kinds of rules: normalization rules and grammatical rules (See Green paragraph 0073). Three types of normalization rules are disclosed, each of which has a specifically defined format (See Green paragraphs 78-79 and 87-92 for *replacement rules*, 114-115 for *joining rules*, and 134-143 for *ordering rules*). Grammar rules likewise are expressed in a formal language (See Green paragraph 187). Applicant respectfully submits that Green does not disclose determining a match between a syntax of any kind of text and any kind of rule, and that further, the unstructured syntax of the source text combined with the structured syntax of the rules that are applied render the determination of a syntactic match a near impossibility.

The Examiner also references paragraph 414 of Green, specifically citing where Green “compares all possible parse sequences.” Paragraph 413 of Green, however, shows that this comparison is addressing the problem that “tokenization may yield ambiguous results, i.e., identical strings that may be parsed by more than one grammar rule. The parser resolves such ambiguities.” Paragraph 414 of Green therefore refers to comparing alternatives and enacting a tie-breaking measure. Applicant respectfully submits that this paragraph in no way teaches the above-noted feature as claimed in independent claim 1.

Independent claim 8 is directed to an article of manufacture for populating a knowledge base used in validating medical claims. Applicant respectfully submits that Green fails to teach or suggest at least one of the distinguishing features of independent claim 8, namely, filter a translated edit via at least one knowledge-base-population rule to determine a match between the

translated edit and the knowledge-base-population rule. For reasons similar to those given with respect to independent claim 1, Applicant respectfully submits that Green fails to anticipate independent claim 8. Applicant respectfully requests that the 35 U.S.C. § 102 rejection of independent claim 8 be withdrawn.

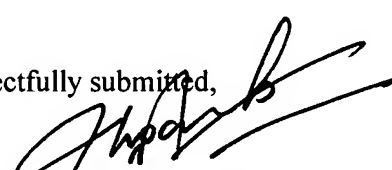
Independent claim 15 is directed to a system for populating a knowledge base. Applicant respectfully submits that Green fails to teach or suggest at least one of the distinguishing features of independent claim 15, namely, means for filtering a translated edit via at least one knowledge-base-population rule to determine a match between a syntax of the translated edit and a syntax of the knowledge-base-population rule. For reasons similar to those given with respect to independent claims 1 and 8, respectively, Applicant respectfully submits that Green fails to anticipate independent claim 15. Applicant respectfully requests that 35 U.S.C. § 102 rejections of independent claim 15 be withdrawn.

Dependent claims 2-7 depend from and further restrict independent claim 1 in a patentable sense. Dependent claims 9-14 depend from and further restrict independent claim 8 in a patentable sense. Dependent claims 15-21 depend from and further restrict independent claim 15 in a patentable sense. For at least the reasons given with respect to independent claims 1, 8, and 15, respectively, Applicant respectfully submits that dependent claims 2-7, 9-14, and 15-21 distinguish over Green. Applicant respectfully requests that the 35 U.S.C. § 102 rejections of these claims be withdrawn.

In view of the above amendments and remarks, Applicant believes the application to be in condition for allowance. A Notice to that effect is respectfully requested.

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Respectfully submitted,

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